INCH-POUND

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SUPERSEDING
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MILITARY SPECIFICATION

CONNECTOR, PLUG, ELECTRICAL U-176( )/G
CONNECTOR, PLUG, ELECTRICAL U-319( )/G
CONNECTOR, RECEPTACLE, ELECTRICAL U-121( )/G
CONNECTOR, RECEPTACLE, ELECTRICAL U-122( )/G

This specification is approved for use by the Communications-Electronics Command, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the following types of spiral four connectors: (See 6.4).

CONNECTOR, PLUG, ELECTRICAL U-176( )/G
CONNECTOR, PLUG, ELECTRICAL U-319( )/G
CONNECTOR, RECEPTACLE, ELECTRICAL U-121( )/G
CONNECTOR, RECEPTACLE, ELECTRICAL U-122( )/G

2. APPLICABLE DOCUMENTS

2.1 Government Documents.

2.1.1 Specifications, Standards, and Handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (See 6.2).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, US Army Communications-Electronics Command, ATTN: AMSEL-ED-TO, Fort Monmouth, NJ 07703-5000, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 5935

SPECIFICATIONS

MILITARY

MIL-M-13231 - Marking of Electronic Items.
MIL-F-14072 - Finish for Ground Signal Equipment.

STANDARDS

MILITARY

MIL-STD-202 - Test Methods for Electronic and Electric Component Parts.
MIL-STD-810 - Environmental Test Methods.

(Unless otherwise indicated copies of the federal and military specifications, standards, and handbooks are available from: Standardization Documents Order Desk, Bldg 4D, 700 Robbins Avenue Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

DRAWINGS

ELECTRONICS COMMAND

SC-GL-57907 Gages for Connector, Receptacle U-121( )/G.
SC-GL-57908 Gages for Connector, Receptacle U-122( )/G.
SC-GL-57909 Gages for Connector, Plug, Electrical U-176( )/G.
SC-GL-57910 Gages for Connector, Plug, Electrical U-319( )/G.
To be Assgnd Digital NATO Interface (DNI) Cable.
SC-DL-72451 Connector, Receptacle, Electrical U-122( )/G.
SC-DL-72457 Connector, Receptacle, Electrical U-121( )/G.
SC-DL-279488 Connector, Plug, Electrical U-176( )/G.
SC-DL-375300 Connector, Plug, Electrical U-319( )/G.

(Copies of drawings required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of Precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Description. The equipments, which this specification covers, are four contact hermaphrodite, polarized, waterproof connectors. The U-176( )/G is a straight shape plug; the U-319( )/G is a 90° angle shape plug; the U-121( )/G is a straight shape panel mount receptacle for outside use; and the U-122( )/G is a straight shape panel mount receptacle for inside use.

3.2 Construction. The equipment shall be constructed in accordance with the requirements of this specification and the following Drawing and Data Lists:

Connector, Plug Electrical U-176( )/G, SC-DL-279488
Connector, Plug electrical U-319( )/G, SC-DL-375300
Connector, Receptacle, Electrical U-121( )/G, SC-DL-72457
Connector, Receptacle, Electrical U-122( )/G, SC-DL-72451

3.3 Cast and molded parts.

3.3.1 Casting. Castings shall be of uniform quality and condition, and from cracks, harmful shrinkage, porosity, gas holes, foreign matter, and injurious defects. The surface of the castings shall be free from pits, parting lines, porous areas, fins, ridges, modules, raised metal, and scale. All castings shall be completely cleaned prior to presentation for inspection. Castings shall not be plugged or welded, nor shall imperfections be filled in.

3.3.2 Molded parts. Molded parts shall be uniform in quality, condition, and color. The molded parts shall be clean, smooth, free from porous areas, foreign materials, weak sections, bubbles, flash, and any injurious defects.

3.4 Cleaning. After assembly, the equipment shall be cleaned thoroughly and shall be free from particles of solder, flux, and other foreign material.

3.5 Finish, protective. Equipment shall be given protective finish in accordance with MIL-F-14072 and the equipment drawings (See 4.3).

3.6 Marking. Marking shall conform to MIL-M-13231 (See 4.3).

3.7 Electrical Requirements.

3.7.1 Continuity. Continuity shall exist between each mated pair of contacts. The value shall be 0.01 ohm maximum (See 4.7.1).

3.7.2 Dielectric strength. There shall be no evidence of voltage drop when a voltage of 1500 rms, 60 cps (2150 volts dc) is applied gradually and maintained for one minute between each terminal in turn and the remaining terminals connected together to the equipment ground (See 4.7.2).

3.7.3 Insulation resistance. The insulation resistance between each terminal in turn and the remaining terminals connected together to the equipment ground shall be not less than 5000 megohms (See 4.7.3).

3.7.4 Contact resistance. The voltage drop across each mated pair of contacts shall not exceed 1.8 millivolts (See 4.7.4).

3.8 Mechanical requirements.

3.8.1 Immersion. After being subjected to the test specified in 4.8.1 the equipment shall meet the requirements of 3.7.1 Continuity, 3.7.2 Dielectric strength, and 3.7.3 Insulation resistance and there shall be no evidence of water in the connector housing or fixture.

3.8.2 Air leakage. There shall be no evidence of air leakage when subjected to the test of paragraph 4.8.2.

3.8.3 Interchangeability. The equipment shall meet the gages specified in paragraph 4.8.3. Like units, assemblies, sub-assemblies, and parts shall be physically and functionally interchangeable, without modification of such items or of the equipment. Individual items shall not be hand-picked for fit. Reliance shall not be placed on any unspecified dimension, characteristic, etc.

3.8.4 Durability. Contact resistance measurements shall be within 10 % of the measurements taken prior to the durability test specified in 4.8.4. There shall be no evidence of base metal showing on the plated parts, distorted contacts, or binding of the coupler.

3.8.5 Pull. While being subjected to the test specified in 4.8.5, the assemblies shall show no straining of individual conductors or penetration of the grip to the steel braid of the cable and shall meet the requirements of 3.7.1 Continuity, 3.7.2 Dielectric strength, and 3.7.3 Insulation resistance. Upon completion of the pull test, the equipment shall be subjected to the test specified in 4.8.1 and meet the requirements of 3.8.1 Immersion.

3.9 Service conditions. The equipment shall meet the following service conditions.

3.9.1 Shock drop. After being subjected to the test specified in 4.9.1, the connectors shall be mechanically operable and any physical damage shall be minor. The equipment shall meet the electrical requirements of 3.7 and 3.8.2 Air leakage.

3.9.2 Salt spray. After being subjected to the salt spray test specified in 4.9.2, the equipment plating shall remain intact and there shall be no evidence of deterioration.

3.9.3 Finish resistance. The equipment plating shall remain intact and show no evidence of deterioration after subjection to the test specified in 4.9.3.

3.9.4 Extreme temperature cycling. During the test specified in 4.9.4, the equipment shall meet the requirements of 3.7.1,3.7.2, and 3.7.3 and show no evidence of deterioration.

3.9.5 Mating at temperature extremes. The equipment shall be capable of being mated without difficulty while at -65°F and +150°F when tested in accordance with 4.9.5.

3.9.6 Humidity. When subjected to the test specified in 4.9.6, the assemblies shall meet the requirements of 3.7.3 Insulation resistance, and there shall be no evidence of deterioration.

3.9.7 High humidity and high temperature. When subjected to the test specified in 4.9.7, the assemblies shall meet the requirements of 3.7.3 Insulation resistance, and there shall be no evidence of deterioration.

3.10 Workmanship. The equipment shall be manufactured and assembled in accordance with the applicable portions of the following paragraphs herein (See 4.10).

3.3 Cast and molded parts
3.4 Cleaning

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to the prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. Inspection covered by subsidiary documents. (See 4.3).

b. Quality conformance inspection.

(1) Quality conformance inspection of equipment before packaging (See 4.4).

4.3 Inspection covered by subsidiary documents. The following shall be inspected under the applicable subsidiary documents as part of the inspection before preparation for delivery:

Item	Where Required
Finish	3.5
Marking	3.6

4.4 Quality conformance inspection of equipment before packaging. The contractor, to demonstrate compliance with specified requirements, shall perform the inspection specified in 4.3 and 4.4.1 through 4.4.4. This does not relieve the contractor of his responsibility for performing any additional inspection which is necessary to control the quality of the product and to assure compliance with all specification requirements. The Government will review and evaluate the contractor's inspection procedures and examine the contractor's inspection records. In addition, the Government--at its discretion-- may perform all or any part of the specified inspection to verify the contractor's compliance with specified requirements. (See 6.5). Test equipment for Government verification inspection shall be made available by the contractor.

4.4.1 Group A inspection. This inspection, including sampling (See 6.2), shall conform to Table I. Group A inspection shall be performed in any order satisfactory to the Government.

TABLE I. Group A inspection

Inspection	Requirement paragraph	Inspection Paragraph
Visual and Mechanical	3.10	4.10
Electrical:		
Continuity	3.7.1	4.7.1
Dielectric strength	3.7.2	4.7.2
Insulation Resistance	3.7.3	4.7.3
Air leakage	3.8.2	4.8.2

4.4.2 Group B inspection. This inspection, including sampling (See 6.2), shall conform to Table II. Group B inspection shall normally be performed on inspection lots that have passed group A inspection and on samples selected from units that have been subjected to and met group a inspection.

TABLE II. Group B inspection

Inspection	Req. Para.	Insp. Para.
Immersion	3.8.1	4.8.1
Interchangeability	3.8.3	4.8.3

4.4.3 Group C inspection. This inspection shall consist of the tests specified in Table III, Table IV, and Table V and shall be performed on samples that have been subjected to and met group A and B inspection. Sample units shall be selected at random without regard to their quality except that samples selected at the start of the contract shall be selected from the first units produced.

4.4.3.1 Group C-1 inspection. This inspection shall consist of the test specified in Table III and shall be performed on 2 units every month or every 1000 units, whichever comes first.

TABLE III. Group C-1 inspection

Inspection	Req. Para.	Insp. Para.
Pull (U-176( )/G) or (U-319( )/G)	3.8.5	4.8.5

4.4.3.2 Group C-2 inspection. This inspection shall consist of the tests specified in Table IV and shall be performed on 6 units every 3 months or every 3000 units, whichever comes first.

TABLE IV. Group C-2 inspection.

Inspection	Req. Para.	Insp. Para.	Sample Units
Durability	3.8.4	4.8.4	2 units
Contact resistance	3.7.4	4.7.4	2 units
Shock drop	3.9.1	4.9.1	2 units

4.4.3.3 Group C-3 inspection. This inspection shall consist of the tests specified in Table V and shall be performed on 4 units once each year or every 12,000 units, whichever comes first, except the Moisture resistance test, Extreme temperature cycling test, and the Mating at extreme temperature test, which shall be performed one time only at the beginning of production.

TABLE V. Group C-3 inspection

Inspection	Req.Para.	Insp.Para.	Sample Units
Humidity	3.9.6	4.9.6	4 units
High humidity and high temperature	3.9.7	4.9.7	4 units
Extreme temperature cycle	3.9.4	4.9.4	4 units
Mating at temperature extremes	3.9.5	4.9.5	2 units
Finish resistance*	3.9.3	4.9.3	2 units
Salt spray*	3.9.2	4.9.2	2 units

* Sample units subjected to this inspection shall not be furnished on contract.

4.4.3.4 Noncompliance. The contractor shall immediately report, in writing, each group C failure occurrence, including details of the failure and characteristics affected. The contractor shall immediately investigate the cause of the failure and further report the results of the investigation and details of the proposed corrective action on (i) the process and materials, as applicable, and (ii) all units of product which were manufactured under the same conditions and which the Government considers subject to the same failure. Reports shall be forwarded to the responsible technical activity designated in the contract through the Quality Assurance Representative. After corrective action has been taken, additional sample units shall be subjected to group C inspection (all inspections, or the inspection which the sample failed, at the option of the Government) and group A and B inspection may be reinstituted; however, final acceptance and shipment will be withheld until the group C reinspection results have shown that the corrective action was effective (See 6.3).

4.4.4 Reinspection of conforming group B and group C sample units. Unless otherwise specified, sample units which have been subjected to and passed group B or group C inspection, or both, may be accepted on contract, provided that they are resubjected to and pass group A inspection after repair of all visible damage.

4.5 Test Conditions.

4.5.1 Connectors and contact assembly. When Connectors U-319( )/G, U-121( )/G and/or are being procured separately, the contractor will furnish sufficient connectors U-176( )/G to accomplish the tests where mating of connectors is required. Contact assemblies used in the contractor furnished U-176( )/G connectors shall be from the contractor's own current production. Gaskets, DNI Cable and metal boxes shall be contractor furnished.

4.5.2 Preparation of samples. The contractor shall prepare samples of each connector on contract for quality conformance inspection in the following manner:

(a) Connectors U-176( )/G or U-319( )/G.

(1) Samples selected for 4.8.1 Immersion, 4.9.6 Moisture resistance, 4.9.7 High humidity, high temperature, 4.9.4 extreme temperature cycling, and 4.8.5 Pull shall be wired to DNI Cable in accordance with drawing to be assigned.

(2) Samples selected for 4.8.2 Air leakage shall have air injected through a plug which is inserted into the cable entrance of the connector. The plug shall have a maximum diameter of 0.355 inches.

(b) Connectors U-121( )/G or U-122( )/G.

Samples selected for 4.8.1 Immersion, 4.8.2 Air leakage, 4.9.6 Moisture resistance, 4.9.7 High humidity, high temperature, 4.9.4 Extreme temperature cycling shall be mounted on sealed box(s). The metal box(s) shall have a valve through which air is injected. Gaskets shall be provided for sealing Connector U-122( )/G to the box. Units shall be wired with DNI Cable when applicable.

4.6 Preconditioning. The contractor shall be permitted to precondition the equipments prior to performing any electrical tests except the electrical test performed during the Moisture resistance test, The High humidity, high temperature test and the Extreme temperature cycling test. The preconditioning shall consist of removing surface moisture from the equipment by wiping, drying, or blowing. The application of heat shall be limited to three minutes or less. For those equipments subjected to 4.8.1 Immersion, 4.9.6 Moisture resistance, and 4.9.7 High humidity, high temperature, unmated and without protective covers, a 24 hour waiting period, in an ambient room temperature is permitted. However, if the contractor exercise this option of preconditioning, the contractor shall precondition all samples selected by the Quality Assurance Representatives immediately prior to testing.

4.7 Electrical tests.

4.7.1 Continuity. The equipment under test shall be mated with connector U-176( )/G containing a contact assembly from current production to determine compliance with the requirements specified in 3.7.1. (See 4.5).

4.7.2 Dielectric strength. The equipment shall be tested in accordance Method 301 of MIL-STD-202 to determine compliance with the requirements of 3.7.2.

4.7.3 Insulation resistance. The equipment shall be tested in accordance Method 302, condition B of MIL-STD-202 to determine compliance with the requirements of 3.7.3.

4.7.4 Contact resistance. The equipment under test shall be mated with a connector U-176( )/G containing a contact assembly from current production to determine compliance with the requirements of 3.7.4. The current used shall be 3 ampere d.c. (See 4.5).

4.8 Mechanical tests.

4.8.1 Immersion. The equipment prepared in accordance with 4.5 shall be to a depth of three feet of water for 16 hours to determine compliance with 3.8.1. Fifty percent of the connectors shall be mated, twenty-five percent shall be with protective cover in place, twenty-five percent shall be without protective cover. When a sample size is not a multiple of four (4) the odd connector(s) shall be tested with protective cover(s) in place.

4.8.2 Air leakage. The equipment prepared in accordance with 4.5 shall be immersed in water approximately 6 inches and air, at 2.5 psi, shall then be applied internally to the equipment. After stabilization, the equipment shall be observed for a minimum of 30 seconds and meet the requirements of 3.8.2. This test shall then be repeated using air at 15 psi.

NOTE: Air leakage performed in any other manner must have Government approval.

4.8.3 Inspection for interchangeability. The equipment shall be gaged using the applicable gages listed on the Gage Lists below to determine conformance with the requirements of 3.8.3.

SC-GL-57907 - Gages for Connector, Receptacle U-121( )/G.
SC-GL-57908 - Gages for Connector, Receptacle U-122( )/G.
SC-GL-57909 - Gages for Connector, Plug, Electrical U-176( )/G.
SC-GL-57910 - Gages for Connector, Plug, Electrical U-319( )/G.

When a mechanical value is not within the specified or design limits, it shall be considered a major defect.

4.8.4 Durability. The connectors shall be tested for compliance with the requirements of 3.7.4. Contact resistance measurements shall be recorded. The connectors shall then be subjected to two hundred cycles of mating and unmating. A cycle shall consist of mating, locking and unlocking, and a complete separation of the connectors. The equipment shall meet the requirements of 3.8.4.

4.8.5 Pull. The pull test shall be performed as follows:

(a) Two Connectors U-176( )/G shall be wired electrically. A static load of 425 pounds shall be applied gradually to the two assemblies mated, and approximately three feet of cable on each assembly. The load shall be applied for a duration sufficient to complete the electrical tests specified in 4.7.1 and 4.7.2.

(b) Two Connectors U-319( )/G shall be wired electrically. A static load of 425 pounds shall be applied between each connector and a point on the cable approximately three feet from the connector. The load shall be applied for a duration sufficient to complete the tests specified in 4.7.1 and 4.7.2.

(c) The pull test is not applicable to Connectors U-121( )/G and U-122( )/G.

(d) The connectors shall meet the requirements of 3.8.5.

4.9 Service tests.

4.9.1 Shock drop. The following drop tests shall be performed:

(a) With the protective caps off and the connector assembled on DNI Cable, drop connectors U-176( )/G or U-319( )/G at random twelve times on concrete from a height of eight feet. Then with cap in place, drop connectors six times on concrete from a height of twenty feet. After each series of drops the connectors shall conform to the requirements of 3.9.1.

(b) Receptacles U-121( )/G or U-122( )/G shall be dropped at random from a height of 36 inches on two inch fir backed by concrete or a rigid steel frame. Six drops shall be made with the protective cover on and six drops with the cover off. Total 12 drops. The receptacles shall conform to the requirements of 3.9.1.

4.9.2 Salt spray. The shall be subjected to 32 hours salt spray in accordance with Method 101A of MIL-STD-202 and meet the requirements of 3.9.2.

4.9.3 Finish resistance. The equipment unassembled shall be subjected to a temperature of 300°F ± 2° for one hour and shall meet the requirements of 3.9.3.

4.9.4 Extreme temperature cycling test. The equipment shall be subjected to the temperature cycle outlined below:

(a) step 1 Maintain the equipment at 77°F ± 3° and a Relative Humidity of less than 75% for 8 hours. Allow the equipment to reach Practical Thermal Equilibrium (PTE) and take measurements*.

(b) step 2 As rapidly as possible raise the temperature to 160°F (+6 -0)°F.

(c) step 3 Maintain at 160°F (+6 -0)°F for a minimum of 24 hours or to PTE whichever comes first.

(d) step 4 As rapidly as possible lower the temperature to 150°F (+6 -0)°F.

(e) step 5 Maintain at 150°F (+6 -0)°F for 8 hours. Allow the equipment to reach PTE and take measurements*.

(f) step 6 As rapidly as possible lower the temperature to 125°F (+6 -0)°F.

(g) step 7 Maintain at 125°F (+6 -0)°F for 8 hours. Allow the equipment to reach PTE and take measurements*.

(h) step 8 As rapidly as possible lower the temperature to 77°F ± 3° and a relative humidity of less than 75%.

(i) step 9 Maintain at 77°F ± 3° and a relative humidity of less than 75% for 8 hours. Allow the equipment to reach PTE and take measurements*.

(j) step 10 As rapidly as possible lower the temperature to -80°F (+0 -6)°F.

(k) step 11 Maintain at -80°F (+0 -6)°F for a minimum of 24 hours or to PTE whichever comes first.

(l) step 12 As rapidly as possible raise the temperature to -65°F (+0 -6)°F.

(m) step 13 Maintain at -65°F (+0 -6)°F for 8 hours. Allow the equipment to reach PTE and take measurements*.

(n) step 14 As rapidly as possible raise the temperature to -40°F (+0 -6)°F.

(o) step 15 Maintain at -40°F (+0 -6)°F for 8 hours. Allow the equipment to reach PTE and take measurements*.

(p) step 16 As rapidly as possible raise the temperature to 32°F (+0 -6)°F.

(q) step 17 Maintain at 32°F (+0 -6)°F for 8 hours. Allow the equipment to reach PTE and take measurements*

(r) step 18 As rapidly as possible raise the temperature to 77°F ± 3° and a relative humidity of less than 75%.

(s) step 19 Maintain at 77°F ± 3° and a relative humidity of less than 75% for 4 hours. Final measurements* shall be performed as specified.

NOTES: 1. * Measurements shall be as follows: (See 3.9.4).

Test Para.	Measurement	Reqt. Para.
4.7.1	Continuity	3.7.1
4.7.2	Dielectric strength	3.7.2
4.7.3	Insulation resistance	3.7.3

2. When measurements are taken, Practical Thermal Equilibrium shall first be attained. Practical Thermal Equilibrium is attained when the temperature of any selected surface of the equipment changes less than 1°F during a ½ hour period while the ambient temperature is steady.

3. Humidity is uncontrolled except on steps 1, 9, and 19.

4.9.4.1 Connector test setup. The connectors shall be subjected to this test as follows:

(a) Four each U-176( )/G wired--two mated, one with cover off and one with cover on.

(b) Four each U-319( )/G wired--two mated with a U-176( )/G, one with cover off and one with cover on.

(c) Four each U-121( )/G or U-122( )/G mounted on a sealed metal box(s) and wired--two of which shall be mated with a U-176( )/G, one with cover off and one with cover on.

4.9.5 Mating at temperature extremes. Four connectors, two mated and two unmated with covers off shall be subjected to temperature of -65°F ± 2° for 24 hours. While still at -65°F ± 2°, the connectors shall be mated and unmated to determine compliance with the requirements of 3.9.5. Repeat the above test at 150°F ± 2°.

4.9.6 Humidity. The equipment assembled as specified in 4.5 mated, unmated with protective cover in place and unmated without protective cover shall be placed in humidity chamber and subjected to thirty continuous 24 hour cycles in accordance with Procedure II, Method 507.2, of MIL-STD-810. Temperature, relative humidity, and period of time for each portion of the cycle shall conform to MIL-STD-810. Insulation resistance measurements shall be made within 4 hours after the start of each cycle, using Method 302, Condition A, of MIL-STD-202. The equipment shall meet the requirements of 3.9.6.

4.9.7 High humidity and high temperature. The equipment assembled as specified in 4.5 mated, unmated with protective cover in place and unmated without protective cover shall be placed in chamber at 86°F _ 5° and a relative humidity of 92 to 98 percent. The temperature and humidity shall be maintained continuously for 5 days. While still at these conditions, the insulation resistance shall be measured using Method 302, Condition A, of MIL-STD-202. The equipment shall meet the requirements of 3.9.7.

4.10 Visual and mechanical inspection. The connectors shall be examined for the defects listed in Table VI.

TABLE VI. Classification of visual and mechanical defects.

Classification	Defect
Major	Threads chipped, broken or stripped. Rubber boot cut or ripped. (U-176( )/G or U-319( )/G only). Inability to rotate cup freely. (U-121( )/G or U-122( )/G only). Rubber on contacts or terminals. Coupler not operating freely. (U-176( )/G or U-319( )/G only). Inability of the connector to accept the protective cap. Substandard plating. (Flaking, peeling, blisters, etc.). Contacts missing, broken, or bent. Rubber not properly bonded to coupler. (U-176( )/G or U-319( )/G only). Contact assembly cut or ripped. Scratches, cuts, abrasions, etc. with exposure of bare metal. Any foreign objects or material preventing the mating of connectors. Contact assembly parts not bonded together. Finish not as specified.
Minor	Missing parts. Marking incorrect. Scratches, cuts, abrasions, etc. without exposure of bare metal. Abrasions on rubber parts.

5. PACKAGING

5.1 Packaging requirements. The packaging requirements for the desired level(s) of protection shall be as specified by the acquisition activity.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Connector, Plug, Electrical U-176/( )G is intended for use in the field to replace defective or damaged connectors or for providing new connectors for cable assemblies. (See 3.1).

6.2 Acquisition requirements. Acquisition documents should specify the following:

(a) Title, number, and date of this specification and any amendment thereto.

(b) Type required.

(c) Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced. (See 2.1.1 and 2.2).

(d) Sample sizes for group A and Group B inspection.

(e) Marking and shipping of samples.

(f) Place of final inspection.

6.3 Group C inspection. Approval to ship may be withheld at the discretion of the Government, pending the decision from the contracting officer on the adequacy of corrective action. (See 4.4.3.4).

6.4 Nomenclature. The parentheses in the nomenclature will be deleted or replaced by a letter identifying the particular design; for example Connector, Plug, Electrical U-176W/G. As soon as possible after the award of the contract, the contractor should apply to the Government office specified in the contract for such information. (See 1.1).

6.5 Verification inspection. Verification by the Government will be limited to the amount deemed necessary to determine compliance with the contract and will be limited in severity to the definitive quality assurance provisions established in this specification and the contract. The amount of verification inspection by the Government will be adjusted to make maximum utilization of the contractor's quality control system and the quality history of the product.

6.6 Subject term (key word) listing.

Hermaphrodite	Waterproof
Polarized	Straight

6.7 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:

ARMY - CR

Preparing activity

ARMY - CR

(Project 5935-A383)